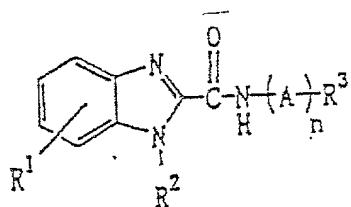


WE CLAIM:

1. A method of treating a mammal having precancerous lesions comprising administering a pharmacologically effective amount of a compound of formula I or pharmaceutically acceptable salt thereof: general formula,



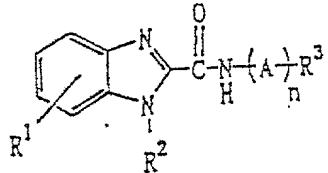
wherein R₁ is a hydrogen atom or a halogen atom; R₂ is a phenyl-lower alkyl group; R₃ is a heterocyclic group selected from the group consisting of an indolyl group, indolinyl group, 1H-indazolyl group, 2(1H)-quinolinonyl group, 3,4-dihydro-2(1H)-quinolinonyl group and 3,4-dihydro-1,4(2H)-benzoxazinyl group, said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a group of the formula -B-R⁴, (a is a lower alkylene group; R⁴ is a 5-to 11-membered saturated or unsaturated heterocyclic group of single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridyl-carbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6-membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group); a lower alkenyl group; a lower alkoxycarbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxycarbonyl-substituted lower alkyl group;

A is a lower alkylene group; and

n is 0 or 1.

2. The method according to Claim 1, wherein R³ is an indolyl group, said indolyl group may have 1 to 3 substituents selected from the group consisting of: a group of the formula -B-R⁴, (B is a lower alkylene group; R⁴ is a 5- to 11-membered saturated or unsaturated heterocyclic group of single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridylcarbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group)); a lower alkenyl group; a lower alkoxy carbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxy carbonyl-substituted lower alkyl group.

3. A method for inhibiting the growth of neoplastic cells comprising exposing the cells to a growth inhibiting effective amount of a compound of Formula I or pharmaceutically acceptable salt thereof:



wherein R₁ is a hydrogen atom or a halogen atom; R₂ is a phenyl-lower alkyl group; R₃ is a heterocyclic group selected from the group consisting of an indolyl group, indolinyl group, 1H-indazolyl group, 2(1H)-quinolinonyl group, 3,4-dihydro-2(1H)-quinolinonyl group and 3,4-dihydro- 1,4(2H)-benzoxazinyl group, said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a group of the formula -B-R⁴, (B is a lower alkylene group; R⁴ is a 5- to 11-membered saturated or unsaturated heterocyclic group of single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridylcarbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group)); a lower alkenyl group; a lower alkoxy carbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxy carbonyl-substituted lower alkyl group.

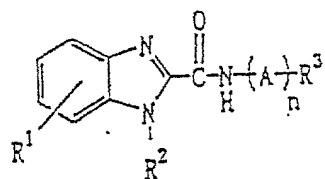
sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridyl-carbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6-membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group); a lower alkenyl group; a lower alkoxycarbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxycarbonyl-substituted lower alkyl group;

A is a lower alkylene group; and

n is 0 or 1.

4. The method according to Claim 3, wherein R³ is an indolyl group, said indolyl group may have 1 to 3 substituents selected from the group consisting of: a group of the formula -B-R¹, (B is a lower alkylene group; R⁴ is a 5- to 11-membered saturated or unsaturated heterocyclic group of single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridylcarbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group); a lower alkenyl group; a lower alkoxycarbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxycarbonyl-substituted lower alkyl group.

5. A method for regulating apoptosis in human cells comprising exposing said cells to an effective amount of a compound of the formula:



wherein R₁ is a hydrogen atom or a halogen atom; R₂ is a phenyl-lower alkyl group; R₃ is a heterocyclic group selected from the group consisting of an indolyl group, indolinyl group, 1H-indazolyl group, 2(1H)-quinolinonyl group, 3,4-dihydro-2(1H)-quinolinonyl group and 3,4-dihydro- 1,4(2H)-benzoxazinyl group, said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a group of the formula -B-R⁴, (.a is a lower alkylene group; R⁴ is a 5-to 11-membered saturated or unsaturated heterocyclic group of single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridyl-carbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group.or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6-membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group); a lower alkenyl group; a lower alkoxycarbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxycarbonyl-substituted lower alkyl group;

A is a lower alkylene group; and

n is 0 or 1.

6. The method according to Claim 5, wherein R³ is an indolyl group, said indolyl group may have 1 to 3 substituents selected from the group consisting of: a group of the formula -B-R⁴, (B is a lower alkylene group; R⁴ is a 5- to 11-membered saturated or unsaturated heterocyclic group of

single ring or binary ring, having 1 to 4 hetero atoms selected from the group consisting of a nitrogen atom, oxygen atom and sulfur atom, (said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a halogen atom, a lower alkyl group, a lower alkoxy group and oxo group) or a group of the formula -NR⁵R⁶ (R⁵ and R⁶ are each the same or different, and a hydrogen atom, a lower alkyl group, a cycloalkyl group, a pyridylcarbonyl group, an isoxazolylcarbonyl group which may have 1 to 3 lower alkyl groups as the substituents, a pyrrolylcarbonyl group or an amino-substituted lower alkyl group which may have a lower alkyl group as the substituent; further R⁵ and R⁶ may form 5- to 6membered saturated heterocyclic group by combining to each other, together with the adjacent nitrogen atom being bonded thereto, further with or without other nitrogen atom or oxygen atom; said heterocyclic group may have 1 to 3 substituents selected from the group consisting of a hydroxy group and a phenyl group)); a lower alkenyl group; a lower alkoxycarbonyl group; a phenoxy-lower alkyl group which may have cyano group as the substituents; a halogen-substituted lower alkyl group; and a lower alkoxycarbonyl-substituted lower alkyl group.